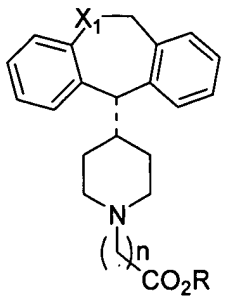
CLAIMS

What is claimed is:

1. A compound represented by the following structural formula:



or a pharmaceutically acceptable salts thereof, wherein:

(- - -) represents a single or double bond;

X1 is –O-, -S-, or $-CH_2-$;

n is an integer from 1 to 6;

the aryl rings are each optionally and independently substituted;

the alkylene spacer molecule between the piperidine and the $-CO_2R$ group is substituted; and

R is –H, 2-propyl, 2-butyl, 2-pentyl, cyclopentyl, cyclohexyl, 3-tetrahydrofuryl, 3-pentyl, 1,3-dimethoxy-2-propyl, 4-tetrahydropyranyl, 2,4-dimethyl-3-pentyl, 1-methoxy-2-propyl, 1-3-diethoxy-2-propyl, or 2,2'dimethyl-1-propyl.

2. The compound of Claim 1, wherein R is -H.

3. The compound of Claim 2, wherein:

the aryl rings are each optionally and independently substituted, and the alkylene spacer molecule is independently substituted with one or more groups selected from halogen, dimethylaminocarbonyl, fluoroalkyl, hydroxy, C_{1-6} alkyl, C_{1-6} alkoxy, carboxylic acid, methylhydroxy, methylcarbonyl, cyano, aminomethyl, (aminoalkyl), ethoxycarbonylmethoxy,

cyanomethyloxy, (acetoxyethyl)oxy, (hydroxyoxyethyl)oxy, morphilinoethyloxy, (tetrazol-5-yl)methyloxy, carboxymethyloxy, dimethylaminocarbonylmethyloxy, morphilinocarbonylmethyloxy, (1-ethoxycarbonyl-1-methylethyl)oxy, (1-carboxy-1methylethyl)oxy, (2-methoxyethyl)oxy, (1-dimethylaminocarbonyl-1-methylethyl)oxy, (1-ethoxycarbonyl)cyclobutoxy, (1-carboxy)cyclobutoxy, (1,1-dimethyl-2-hydroxyethyl)oxy, (2,2-dimethyl-2-hydroxyethyl)oxy, acyloxy, cycloalkyl, arylalkyl, alkoxycarbonyl, and substituted or unsubstituted amines.

4. The compound of Claim 2, wherein:

the aryl rings are optionally and independently substituted with one or more substituents selected from hydrogen, halogen, alkyl, fluoroalkyl, hydroxy, alkoxy, $-(O)_u-(CH_2)_t-C(O)OR_4$, $-(O)_u-(CH_2)_t-OC(O)R_4$, $-(O)_u-(CH_2)_t-C(O)-NR_5R_6$ and $-(O)_u-(CH_2)_t-NHC(O)O-R_4$;

wherein:

t is an integer from 0 to 3;

$-(CH_2)_t-$ is substituted or unsubstituted; and

R_4, R_5, and R_6 are independently hydrogen, an aliphatic group, a substituted aliphatic group, an aromatic group, a substituted aromatic group or a non-aromatic heterocyclic group, or R_5 and R_6, taken together with the nitrogen atom to which they are bonded, are a non-aromatic heterocyclic ring.

5. The compound of Claim 2, wherein:

the aryl rings are optionally and independently substituted and the alkylene spacer molecule is independently substituted with one or more of halogen, -OH, $-CO_2H$, alkylimine, alkylsulfonyl, carboxamido, carboxylic alkyl esters, -CH=NH, $-NO_2$, azido, cyano, fluoroalkyl, $-CONR_8R_9$, $-NR_8R_9$,

$-OS(O)_2NR_8R_9$, $-S(O)_2NR_8R_9$, sulfonic acid, sulfonamide, guanidino, $-(O)_u-(CH_2)_t-C(O)OR_4$, $-(O)_u-(CH_2)_t-OC(O)R_4$, $-(O)_u-(CH_2)_t-C(O)-NR_5R_6$, $-(O)_u-(CH_2)_t-NHC(O)O-R_4$, -Q-H, -Q-(aliphatic group), -Q-(substituted aliphatic group), -Q-(aryl), -Q-(aromatic group), -Q-(substituted aromatic group), $-Q-(CH_2)_p-$(substituted or unsubstituted aromatic group), -Q-(non-aromatic heterocyclic group) or $-Q-(CH_2)_p-$(non-aromatic heterocyclic group);

wherein:

p is an integer from 1 to 5;

u is 0 or 1;

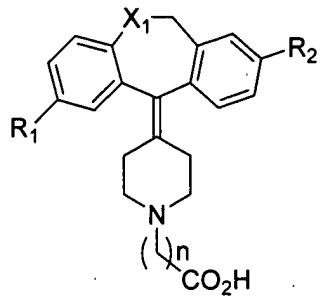
Q is -O-, -S-, -S(O)-, $-S(O)_2$ -, $-OS(O)_2$ -, -C(O)-, -OC(O)-, -C(O)O-, -C(O)C(O)-O-, -O-C(O)C(O)-, -C(O)NH-, -NHC(O)-, -OC(O)NH-, -NHC(O)O-, -NH-C(O)-NH-, $-S(O)_2$ NH-, $-NHS(O)_2-$, $-N(R_7)-$, $-C(NR_7)NHNH-$, $-NHNHC(NR_7)-$, $-NR_8C(O)-$ or $-NR_8$ $S(O)_2$ - ;

R_4, R_5, and R_6 are independently -H, an aliphatic group, a substituted aliphatic group, an aromatic group, a substituted aromatic group, a non-aromatic heterocyclic group, -NHC(O)-O-(aliphatic group), -NHC(O)-O-(aromatic group) or -NHC(O)-O-(non-aromatic heterocyclic group), or R_5 and R_6, taken together with the nitrogen atom to which they are bonded, are a non-aromatic heterocyclic ring;

R_7 is -H, an aliphatic group, a benzyl group, an aryl group or a non-aromatic heterocyclic group; and

R_8 and R_9 are independently -H, hydroxy, an aliphatic group, a substituted aliphatic group, a benzyl group, an aryl group or a non-aromatic heterocyclic group.

6. The compound of Claim 2, wherein the compound is represented by the following formula:



wherein:

n is 1, 2, or 3;

R_1 = -H, -OH, $-CH_2OH$, or $-CH_2CH_2OH$;

R_2 = -H, $-CH_3$, $-CF_3$, -Cl, or –Br; and

the alkylene spacer molecule is: mono-substituted with a substituent other than a noncyclic alkyl group, disubstituted, geminally-dialkylated, or substituted with a cyclic substituent wherein one or more of the carbons of the spacer molecule is contained in the cyclic substituent.

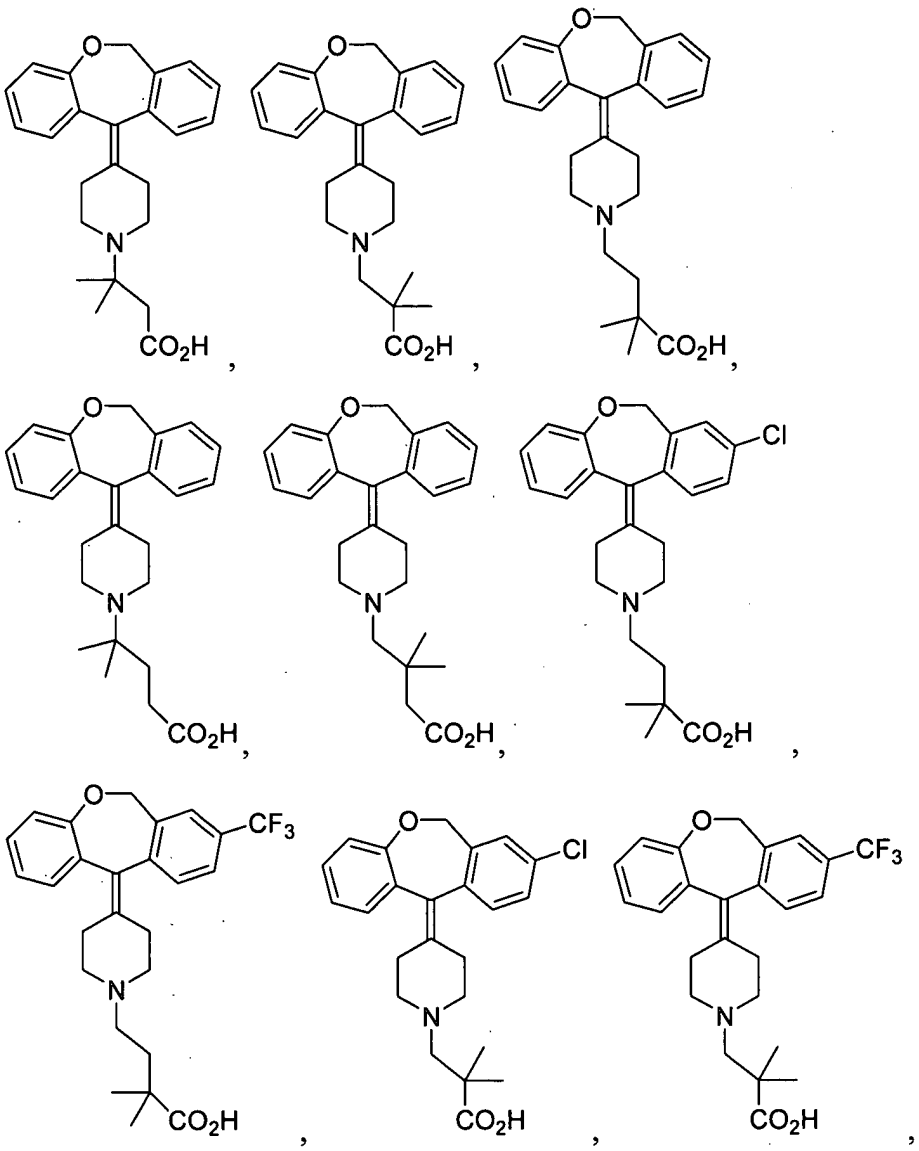
7. The compound of Claim 6, wherein X1 is O.

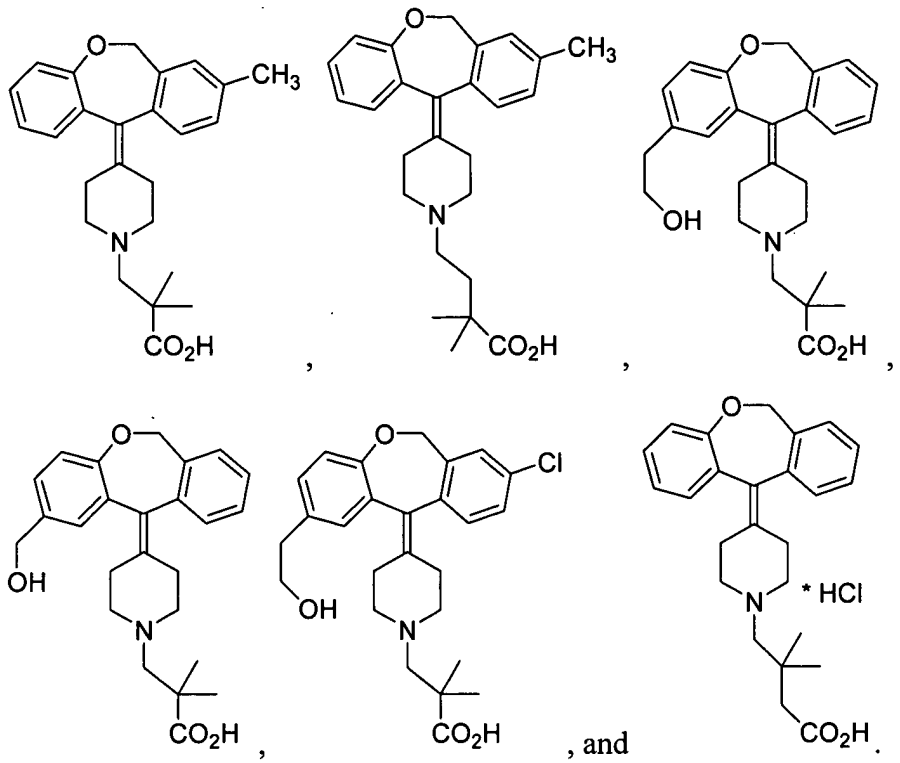
8. The compound of Claim 3, wherein the alkylene spacer is disubstituted.

9. The compound of Claim 8, wherein the alkylene spacer is geminally dialkylated.

10. The compound of Claim 9, wherein the alkylene spacer is geminally dimethylated.

11. The compound of Claim 10, wherein the compound is selected from the group of compounds consisting of:





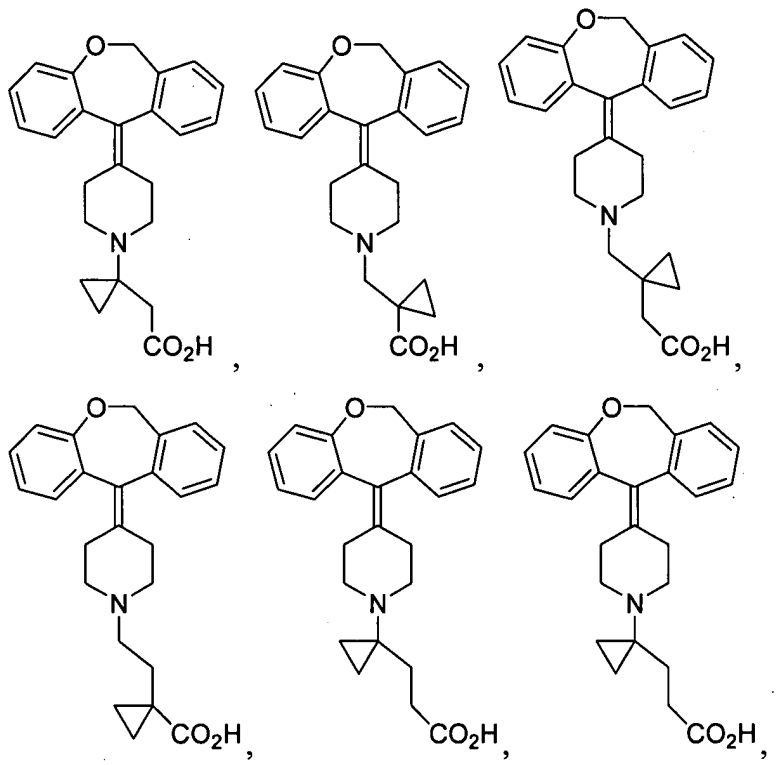
12. The compound of Claim 11, wherein the alkylene spacer is singly substituted with a substituent other than a noncyclic alkyl group.

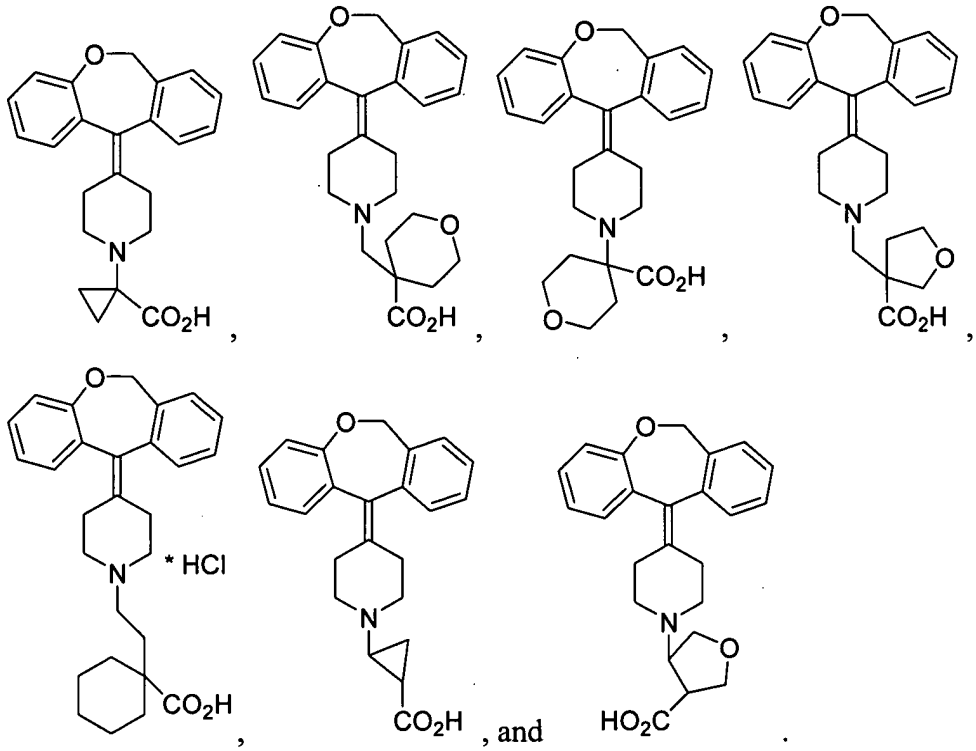
13. The compound of Claim 12, wherein the alkylene spacer is substituted with a heteroatom or a cyclic substituent.

14. The compound of Claim 13, wherein the cyclic substituent is a cycloalkyl group or a cyclic ether group.

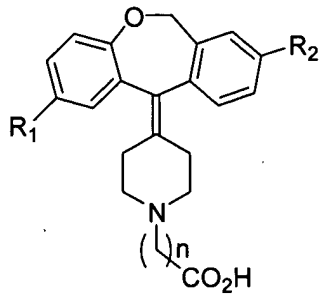
15. The compound of Claim 14, wherein one or more of the carbons of the alkylene spacer is contained in the cyclic substituent.

16. The compound of Claim 15, wherein the compound is selected from the group of compounds consisting of:





17. The compound of Claim 1, wherein the compound is represented by the following formula:



wherein:

n is 1, 2, or 3;

R_1 and R_2 are independently selected from, and the alkylene spacer molecule is independently substituted with, one or more groups selected from halogen, dimethylaminocarbonyl, fluoroalkyl, hydroxy, C_{1-6} alkyl, C_{1-6} alkoxy, carboxylic acid, methylhydroxy, methylcarbonyl, cyano,

aminomethyl, (aminoalkyl), ethoxycarbonylmethoxy, cyanomethyloxy, (acetoxyethyl)oxy, (hydroxyoxyethyl)oxy, morphilinoethyloxy, (tetrazol-5-yl)methyloxy, carboxymethyloxy, dimethylaminocarbonylmethyloxy, morphilinocarbonylmethyloxy, (1-ethoxycarbonyl-1-methylethyl)oxy, (1-carboxy-1methylethyl)oxy, (2-methoxyethyl)oxy, (1-dimethylaminocarbonyl-1-methylethyl)oxy, (1-ethoxycarbonyl)cyclobutoxy, (1-carboxy)cyclobutoxy, (1,1-dimethyl-2-hydroxyethyl)oxy, (2,2-dimethyl-2-hydroxyethyl)oxy, acyloxy, cycloalkyl, arylalkyl, alkoxycarbonyl, and substituted or unsubstituted amines.